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STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

PATEL, GAUTAM

ART UNIT

PAPER NUMBER

2655

DATE MAILED: 12/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/815,345

Applicant(s)

MA ET AL.

Examiner

Gautam R. Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 6,7,10,11,15 and 19-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,8,9,12-14,16-18 and 37-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-39 are pending for the examination.

Election/Restriction

2. Claims 6-7, 10-11, 15 and 19-36 are withdrawn from further consideration by the examiner, 37 C.F.R. § 1.142(b) as being drawn to figs. 7-10 and 13-15, and group B. Election was made with traverse of claims 1-5, 8-9, 12-14, 16-18 and 37-39.

Applicant's election with traverse of group B and species b [second embodiment] in Paper No. 8 is acknowledged. The traversal is on the ground(s) that "the Examiner has not analyzed the invention subspecies B [b] to determine if, as *claimed*, the optical pickup of subspecies B is separately usable from the invention of subspecies A. Therefore it is respectfully ...".

"It is believed that classification, and especially at a sub-subclassification level, is not conclusive on the question of restriction. ...evaluation of both sets of claims would not provide an undue burden upon the Examiner at this time in comparison with additional expense and delay to Applicants".

This is not found persuasive because, the Examiner does not need to show separate classification or field of search for **election of the species requirement**. See 803.00 and 808.01(a); M.P.E.P.

As to undue burden on the Examiner as compared to expense and delay, it not unto the Applicants to determine what is undue burden to examiner or not. And since MPEP is silent about the cost to Applicant as compared to burden to Examiner that point is moot.

It is not clear that Applicants are arguing about the species b or Group B on page 2, para. 4. However, even though the Applicants have clearly indicated that fig. 5 and fig. 6 are two separate embodiments, for examination purposes it assumed that these

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are complimentary and not different variation of the species. Therefore figs. 3-6 are being examined as a single species.

The requirement is still deemed proper and is therefore made **FINAL**.

Applicant is reminded that **upon the cancellation of claims to a non-elected invention, the inventorship must be amended** in compliance with 37 C.F.R. § 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a diligently-filed petition under 37 C.F.R. § 1.48(b) and by the fee required under 37 C.F.R. § 1.17(h).

3. Claims **1-5, 8-9, 12-14, 16-18 and 37-39** are now pending for the examination after the restriction. Action on these claims follows. Applicants urged to cancel non-elected claims.

Priority

4. Receipt is acknowledged of papers submitted under 35 U.S.C. § 119(a)-(d), which papers have been placed of record in the file.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double

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patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 8 and 37 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending application Serial No. 09/817,754. Although the conflicting claims are not identical, they are not patentably distinct from each other because a generator generating seek direction is inherently present when that signal is already is generated.

Drawings/Objection

6. The drawings are objected for following reasons:

The drawings are objected to under 37 C.F.R. § 1.83(a). The drawings must show *every feature* of the invention specified in the claims. Therefore, "a **second signal processing portion** to generate the seek direction detecting signal from the second electrical signals **and** the track error signal" must be shown or the feature canceled from the claims [e.g., claim 1, 8 etc]. **No new matter should be entered.**

NOTE: Unit 40 in fig. 6, only produces TCS, NOT the combination of TCS **AND** TES as claimed.

Corrections is required.

Applicants are required to submit a proposed drawing correction in response to this Office Action. Any proposal by the applicant for amendment of the drawings to cure defects must consist of following:

Drawing changes must be made by presenting replacement figures which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments, or remarks, section of the amendment, and may be **accompanied by a marked-up copy of one or**

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more of the figures being amended, with annotations. Any replacement drawing sheet ***must be identified in the top margin as "Replacement Sheet"*** and include all of the figures appearing on the immediate prior version of the sheet, even though only one figure may be amended. ***Any marked-up (annotated) copy showing changes must be labeled "Annotated Marked-up Drawings" and accompany the replacement sheet in the amendment (e.g., as an appendix).***

Content of Specification

7. The disclosure is objected for following reasons.

1. Specification needs to be updated with respect to information on the related applications. Cross-References to Related Applications: See 37 C.F.R. ' 1.78 and section 201.11 of the M.P.E.P.

2. The title of the invention is neither precise nor descriptive. A new title is required which should include, using twenty words or fewer, claimed features that differentiate the invention from the Prior Art. It is recommended that the title should reflect the gist of or the improvement of the present invention.

Correction is required.

Claim Rejections - 35 U.S.C. § 112

8. The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 2-5 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

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Page 10, paragraph 28 simply states that "second signal processing portion 40 outputs track cross signal (TCS)". The specification does not disclose at all that the second signal processing portion generates the seek direction detecting signal at all.

9. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-5 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2, lines 8-11 "the second signal processing portion generates the seek direction detecting signal from the second electrical signals respectively detected by the outer pair of first and second outer light receiving portions and the inner pair of first and second inner light receiving portions." is confusing and unclear. Since **both** inner and out portion of the photodiodes are part of second detector only, which only produces TCS, it is not clear how they can also produce seek signal without the help of TES signal.

Claim Rejections - 35 U.S.C. § 103

10. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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11. Claims 1, 8-9, 12-14, 16-17 and 37-39 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kitamura et al., US. patent 5,986,996 (hereafter Kitamura) in view of AAPA (applicants Admitted Prior Art).

As to claim 1, Kitamura discloses the invention as claimed [see Figs. 1-22, especially 1, 7-11], including a light dividing unit, a first optical detector, a second optical detector and a signal processing portion comprising:

a light dividing unit [fig. 1, unit 6] to divide an incident light beam into a main beam and a sub-beam to form a main beam spot and a sub-beam spot having an optical aberration, the main beam and the sub-beam being focused in a track direction of an optical disk, the light dividing unit being disposed so that a direction of the optical aberration is in a radial direction of the optical disk [col. 9, lines 28 to col. 10, line 32 and col. 11, lines 41-60];

an optical detector [fig. 1, unit 4] comprising:

a first optical detector [fig. 1, 4a] having light receiving portions to receive the main beam reflected from the optical disk, and to convert portions of the reflected main beam into independent first electrical signals [col. 9, line 63 to col. 10, line 32 and col. 11, lines 6-60], and

a second optical detector [fig. 1, unit 4b] to receive the sub-beam reflected from the optical disk, and to convert portions of the received sub-beam into independent second electrical signals [col. 9, line 63 to col. 10, line 32 and col. 11, lines 6-60]; and

a signal processing portion [fig. 1, unit 12] [col. 9, lines 51-62].

As to claim 1, Kitamura discloses all of the above elements including a signal processing portion and plurality of photo-detecting portions arranged in outer and inner fashion in radial direction [see fig. 1, and 9]. Kitamura does not specifically disclose well known details of the signal processing portion; or circuitry that is inherently present within the signal processor.

However AAPA clearly discloses:

a first signal processing portion [fig. 2, units 3, 4, 5 and 6] to detect a track error signal from the first electrical signals, and

a second signal processing portion [fig. 2, unit to generate the seek direction detecting signal from the second electrical signals and the track error signal [specification pages 1-3].

Both Kitamura, and AAPA are interested in providing track error correcting and focus error correcting signal in system with 3-beam method. Both shows multiple light detectors arranged in radial and tangential directions, both has signal processing portions.

Therefore, it would have been obvious to provide the system of Kitamura with signal processing portion and associated details as taught by AAPA. The application or use of the signal processing portion as taught by AAPA would have been obvious, because the signal processing portion performs the same function in the same way as the signal processing portion of Kitamura's system, and is an equivalent element. One of ordinary skill in the art would have recognized that the signal processing portion of AAPA was equivalent and an obvious alternative to signal processing portion of system of Kitamura.

12. As to claim 8, it is rejected for the same reasons set forth in the rejection of claim 1, supra.

13. As to claim 9, AAPA discloses:

said light receiving portions comprise first light receiving portions [fig. 2, unit 2a] to receive the reflected main beam and to generate the first signals, and second light receiving portions [fig. 2, units 2b & 2c] to receive the reflected sub-beam and to generate the second signals, and said signal processing portion comprises:

a first signal processing portion [fig. 2, units 4, 5, and 6] to output a track error signal from the first signals, and

a second signal processing portion [fig. 2, unit 7] to output the seek direction detecting signal from the second signals and the track error signal [specification pages 1-3].

14. As to claim 12, AAPA discloses:

the second signal processing portion comprises a track cross signal generator that generates a track cross signal from the second signals [specification pages 1-3].

15. As to claim 13, Kitamura discloses:

the second optical light receiving portions comprises inner [13c & 13f] and outer light receiving portions [13d & 13e] aligned along a radial direction of the optical disk, and the inner light receiving portions being disposed between the outer light receiving portions [col. 11, lines 6-60].

16. As to claim 14, AAPA discloses:

the track cross signal generator comprises a differential amplifier [fig. 2, unit 6] to differentiate a first summed pair [S1d] of the second signals [S2d] from a first pair of the inner and outer light receiving portions and a second summed pair of the second signals from a second pair of the inner and outer light receiving portions [specification pages 1-3].

17. As to claim 16, AAPA discloses:

the second signal processing portion comprises a track cross signal generator [fig. 2, unit 3] that generates a track cross signal from the second signals without the first signals [fig. 2, output of unit 3] [specification pages 1-3].

18. As to claim 17, AAPA discloses:

the second signal processing portion generates the seek direction detecting signal by comparing a phase difference between the track cross signal and the track error signal [specification pages 1-3].

19. As to claims 37-39, they are method claims corresponding to claims 8-9 and 16 respectively and they are therefore rejected for the same reasons set forth in the rejection of claims 8-9 and 16 respectively, supra.

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20. Claims 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kitamura and AAPA as applied to claims 1, 8-9, 12-13 above, and further in view of Lee et al., US. patent 5,706,263 (hereafter Lee).

As to claim 18, Kitamura and AAPA discloses all of the above elements, including beam spots and light receiving portions in high density storage system. Combination of Kitamura and AAPA does not specifically discloses that the light receiving portions width is 0.2 to 0.8 times a diameter of a beam spot on the disk.

However, it is well known in the art that almost all high density system uses the photodetector whose width is smaller than the beams spot to achieve higher resolution.

Also Lee clearly discloses:

a combined width of the inner light receiving portions is .33 to .66 [or within the limits of 0.2 to 0.8] times a diameter of a beam spot formed by the reflected sub-beam on the optical disk [abstract and col. 3, line 34 to col. 4, line 15].

All Kitamura, AAPA and Lee are interested in improving the recording mechanism of the disk and all of them disclosed different widths of the beam spots as compared to photodetector's width. All of them interested in high density recording.

One of ordinary skill in the art at the time of invention would have realized that high density recording would be sensitive to jitter caused by the interfering light and reproduction quality reduction, due high density. So, one would be motivated to reduce this unwanted noise and increase reproduction quality. Therefore, it would have been obvious to have used a photodiode with width which is smaller than the beam spot in the system of Kitamura and AAPA as taught by Lee because one would be motivated to reduce jitter caused by the interfering light and improve high resolution reproduction [abstract; Lee].

21. A search based on the best understanding of the claims has been made to find the most pertinent art, but no statement about invention will be appropriate at this time regarding the allowableness of claims 2-5 and no art rejection will be made

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in this office action regarding the claims 2-5, due to the speculation required to interpret the claims because of their indefiniteness under 35 U.S.C. 112, 1st and 2nd paragraphs as noted above (see *In re Steele*, 134 USPQ 292).

Other prior art cited

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
1. Miyazaki et al. (US. patent 5,515,353) Optical head with forward and return light beam ...
 2. Nagahama et al. (US. patent 4,904,856) Optical pickup device ...
 3. Wortel (US. patent 5,820,241) Beam-combining device ..
 4. Coops et al. (US. patent 4,908,506) Apparatus for optically scanning ..
 5. Sohmuta (US. patent 5,822,295) Optical head device ...

Contact information

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gautam R. Patel whose telephone number is (703) 308-7940. The examiner can normally be reached on Monday through Thursday from 7:30 to 6.

The appropriate fax number for the organization (Group 2650) where this application or proceeding is assigned is (703) 872-9314.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Doris To can be reached on (703) 305-4827.

Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 305-4700 or the group Customer Service section whose telephone number is (703) 306-0377.



Gautam R. Patel
Patent Examiner
Group Art Unit 2655

December 20, 2003